

# CLAIMS

1. A display device used as a display part of an electronic device, operating according to display data and power supply voltage supplied from a side of the electronic device proper, and formed by a panel in which a display area and a peripheral circuit part for driving the display area are integrally formed in an integrated manner on an insulating substrate, said display device characterized in that:

said display area comprises pixel electrodes arranged in a form of a matrix, a common electrode opposed to the pixel electrodes, and an electrooptic material retained between the pixel electrodes and the common electrode; and

said circuit part comprises;

a driver for writing a signal voltage to a side of the pixel electrodes according to the display data,

a common driver for applying a common voltage to a side of the common electrode,

an offset circuit having a coupling capacitor for generating a predetermined offset voltage to adjust a level of the common voltage with respect to the signal voltage, and

a start circuit for pre-charging the coupling



capacitor of the offset circuit to an offset voltage at a time of a rising edge of the power supply voltage, and discharging the coupling capacitor at a time of a falling edge of the power supply voltage.

2. The display device as claimed in claim 1, characterized in that:

the display area and the peripheral circuit part for driving the display area in said panel comprise thin film transistors formed on a common insulating substrate by an identical process; and

said common driver, said offset circuit, and said start circuit are mounted on the common insulating substrate except for the coupling capacitor.

3. The display device as claimed in claim 1, characterized in that:

said start circuit operates only at the time of the rising edge of the power supply voltage and at the time of the falling edge of the power supply voltage, and it is in a non-operational state during other times.

4. A display device used as a display part of an electronic device capable of switching between a normal power consumption state and a low power consumption state, operating according to display data and power supply voltage supplied from a side of the electronic device



proper, and formed by a panel in which a display area and a peripheral circuit part for driving the display area are integrally formed in an integrated manner on an insulating substrate, said display device characterized in that:

said panel can switch between an operational mode and a standby mode according to the switching of the side of the electronic device proper between the normal power consumption state and the low power consumption state;

in the operational mode, the panel operates while supplied with the power supply voltage from the side of the electronic device proper, and makes a desired display by driving the display area;

in the standby mode, the panel has standby control means for stopping the driving of the display area and inactivating the circuit part to reduce power consumption of the panel while the panel remains in a state of being supplied with the power supply voltage from the side of the electronic device proper;

said display area comprises pixel electrodes arranged in a form of a matrix, a common electrode opposed to the pixel electrodes, and an electrooptic material retained between the pixel electrodes and the common electrode; and



said circuit part comprises;

a driver for writing a signal voltage to a side of the pixel electrodes according to the display data supplied from the side of the electronic device proper,

a common driver for applying a common voltage to a side of the common electrode,

an offset circuit having a coupling capacitor for generating a predetermined offset voltage to adjust a level of the common voltage with respect to the signal voltage, and

a start circuit for pre-charging the coupling capacitor of the offset circuit to an offset voltage in advance when a return is made from the standby mode to the operational mode, and discharging the coupling capacitor when a transition is made from the operational mode to the standby mode.

5. A display device as claimed in claim 4, characterized in that:

the display area and the peripheral circuit part for driving the display area in said panel comprise thin film transistors formed on a common insulating substrate by an identical process; and

said common driver, said offset circuit, and said start circuit are mounted on the common insulating



substrate except for the coupling capacitor.

6. The display device as claimed in claim 4,  
characterized in that:

said start circuit operates only when the return is  
made from the standby mode to the operational mode and  
when the transition is made from the operational mode to  
the standby mode, and it is in a non-operational state  
during other times.